

## CLAIMS

1. A high-frequency composite part comprising:

a switch for selectively switching a signal path between an antenna terminal and a transmission-side input terminal and a signal path between the antenna and a reception-side balanced output terminal;

an LC filter having an inductor and capacitors disposed between the antenna terminal and the transmission-side input terminal;

a surface acoustic wave filter disposed between the switch and the reception-side balanced output terminal; and

a matching element having an inductor and capacitors disposed between the surface acoustic wave filter and the reception-side balanced output terminal,

wherein the switch, the LC filter, the surface acoustic wave filter, and the matching element are integrated in a laminated block having a plurality of dielectric layers laminated.

2. A high-frequency composite part as claimed in claim 1, wherein the inductor of the matching element is formed in a first area of the laminated block, and the inductor and capacitors of the LC filter are formed in a second area different from the first area when seen from the top.

3. A high-frequency composite part as claimed in claim 1 or 2, wherein the inductor of the matching element is mounted on the surface of the laminated block, and the inductor and capacitors of the LC filter are contained inside the laminated block.

4. A high-frequency composite part as claimed in any one of claims 1 to 3, wherein a ground electrode is disposed between the inductor of the matching element and the inductor and capacitors of the LC filter.

5. A high-frequency composite part as claimed in any one of claims 1 to 4, wherein a shunt capacitor of the capacitors of the LC filter is

formed in the vicinity of the lowest layer of the laminated block.

6. A high-frequency composite part as claimed in any one of claims 1 to 5, wherein the inductor and capacitances of the matching element are formed on the surface of the laminated block, and the inductor of the matching element is disposed so as to be directly next to the capacitors of the matching element not through any other element.

7. A high-frequency composite part as claimed in any one of claims 1 to 6, wherein the surface acoustic wave filter is a balanced-type surface acoustic wave filter having balanced output ports, the inductor of the matching element is connected in parallel between the balanced output ports, and the capacitors of the matching element are connected in series to the balanced output ports.

8. A high-frequency composite part as claimed in any one of claims 1 to 6, wherein the surface acoustic wave filter is an unbalanced-type surface acoustic wave filter having unbalanced output ports, and the inductor and capacitors of the matching element function as a balun.

9. A high-frequency composite part as claimed in any one of claims 1 to 8,

wherein a diplexer branching a signal path for a first frequency band and a signal path for a second frequency band different from the first frequency band is contained at the rear stage of the antenna terminal,

wherein, in the signal path for a first frequency band, a first switch for selectively switching a signal path between the antenna terminal and a first transmission-side input terminal and a signal path between the antenna terminal and a first reception-side balanced output terminal, a first LC filter having an inductor and capacitors disposed between the first switch and the first transmission-side input terminal, a first surface acoustic wave filter disposed between the first switch and the first reception-side balanced output terminal, and a first matching element having an inductor and capacitors

disposed between the first surface acoustic wave filter and the reception-side balanced output terminal are contained,

wherein, in the signal path for a second frequency band, a second switch for selectively switching a signal path between the antenna terminal and a second transmission-side input terminal and a signal path between the antenna terminal and a second reception-side balanced output terminal, a second LC filter having inductors and capacitors disposed between the second switch and the second transmission-side input terminal, a second surface acoustic wave filter disposed between the second switch and the second reception-side balanced output terminal, and a second matching element having an inductor and capacitors disposed between the second surface acoustic wave filter and the second reception-side balanced output terminal are contained, and

wherein the diplexer, the first and second switches, the first and second LC filters, the first and second surface acoustic wave filters, and the first and second matching elements are integrated in a laminated block having a plurality of dielectric layers laminated.

10. A high-frequency composite part as claimed in any one of claims 1 to 8,

wherein a diplexer branching a signal path for a first frequency band and a signal path for a second frequency band different from the first frequency band is provided at the rear stage of the antenna terminal,

wherein, in the signal path for a first frequency band, a first switch for selectively switching a signal path between the antenna terminal and a first transmission-side input terminal and a signal path between the antenna terminal and a first reception-side balanced output terminal, a first LC filter having an inductor and capacitors disposed between the first switch and the first transmission-side input terminal, a first surface acoustic wave filter disposed between

the first switch and the first reception-side balanced output terminal, and a first matching element having an inductor and capacitors disposed between the first surface acoustic wave filter and the first reception-side balanced output terminal are contained,

wherein, in the signal path for a second frequency band, a second switch for selectively switching a signal path between the antenna terminal and a second transmission-side input terminal and a signal path between the antenna terminal and second and third reception-side balanced output terminals, a second LC filter having inductors and capacitors disposed between the second switch and the second transmission-side input terminal, a duplexer branching a signal path disposed between the second switch and the second reception-side balanced output terminal and a signal path disposed between the second switch and the third reception-side balanced output terminal, a second surface acoustic wave filter disposed between the duplexer and the second reception-side balanced output terminal, a second matching element having an inductor and capacitors disposed between the second surface acoustic wave filter and the second reception-side balanced output terminal, a third surface acoustic wave filter disposed between the duplexer and the third reception-side balanced output terminal, and a third matching element having an inductor and capacitors disposed between the third surface acoustic wave filter and the third reception-side balanced output terminal are contained, and

wherein the diplexer, the first and second switches, the first and second LC filters, the first, second, and third surface acoustic wave filters, and the first, second, and third matching elements are integrated in a laminated block having a plurality of dielectric layers laminated.